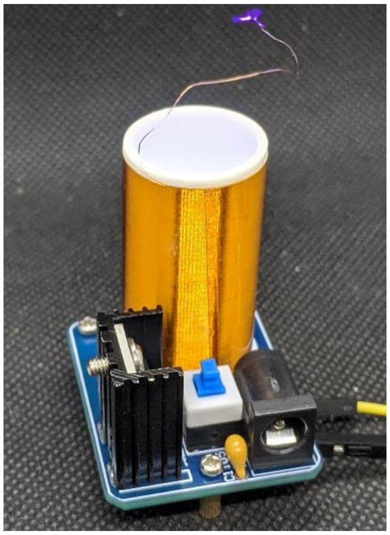
Mini Tesla Coil DIY Electronic Kit Instructions

Guide Developed by: Circuit-Pop Team



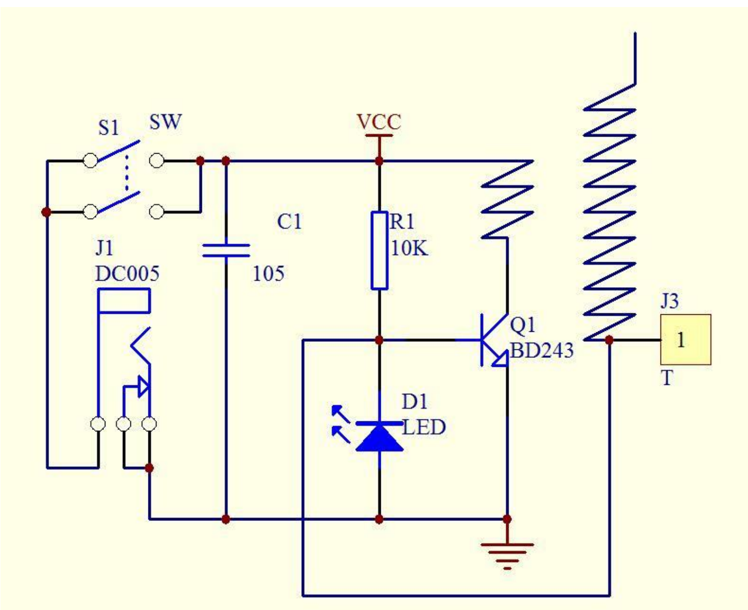
Description:

A Tesla coil is a type of resonant transformer circuit invented by Nikola Tesla. It is used to produce high voltage, low current, high frequency alternating current electricity. Tesla coils produce higher current than the other source of high voltage discharges, electrostatic machines. Today these are used for entertainment and educational displays. With this kit you can build your own Tesla Coil. You might not be able to create a giant spark, but you will be able to make cool looking mini arcs and light up florescent light bulbs!

Parts List:

Parts	Quantity
PCB	1
Secondary Coil	1
Switch	1
DC Jack	1
BD243C Transistor	1
Heatsink	1
1UF CAPACITOR	1
10KΩ Resistor	11
5MM LED	1
TESTING LED	1
HEATSINK SCREW	1
STANDOFF SCREW	3
SPACER	3

Reference Schematic:



Recommended Tools:







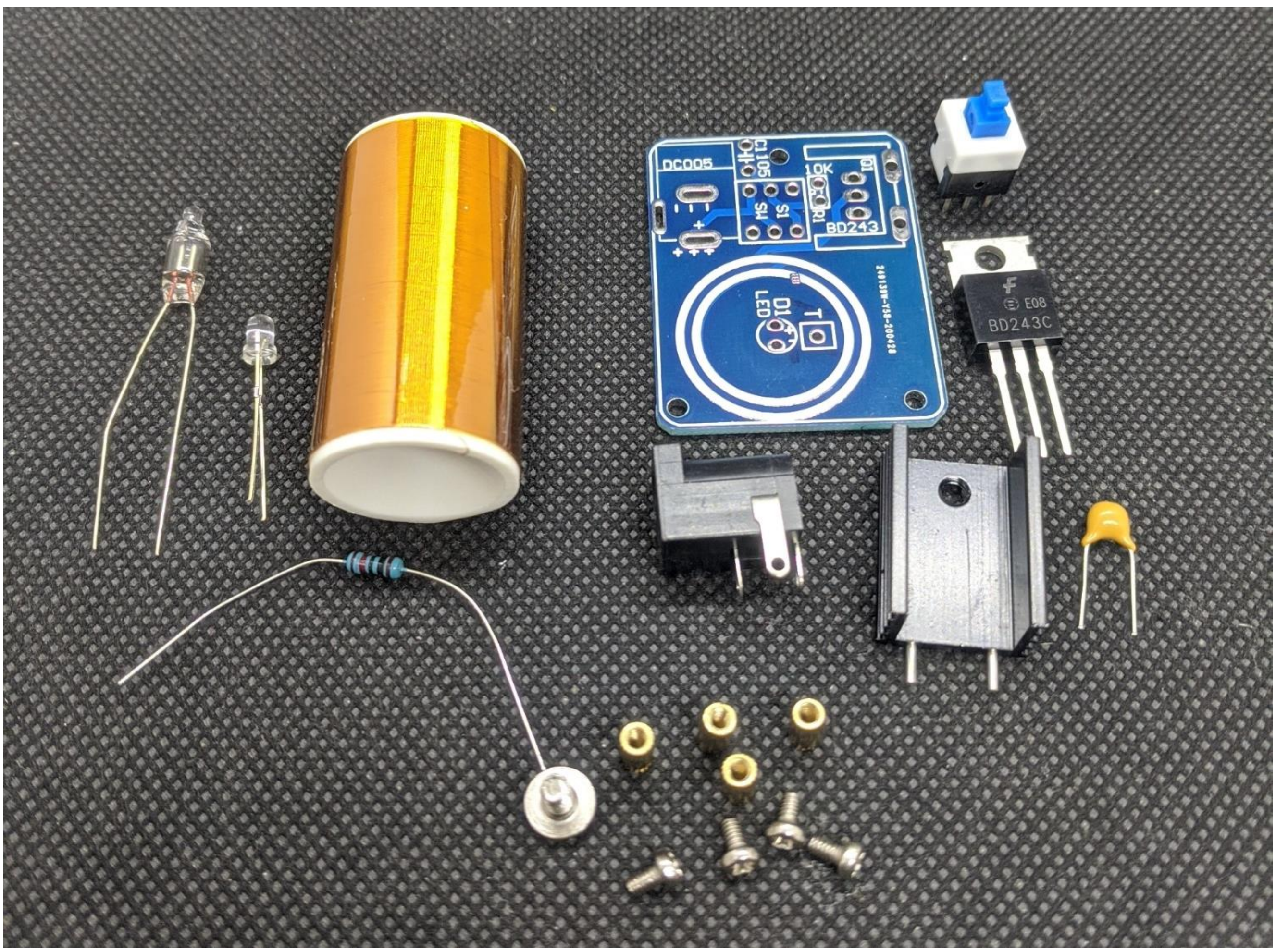
1. Soldering Station
2. Solder
3. Multimeter
4. Super Glue

WARNING: This Tesla Coil Circuit will get hot over a short period of time. Use caution with handling.

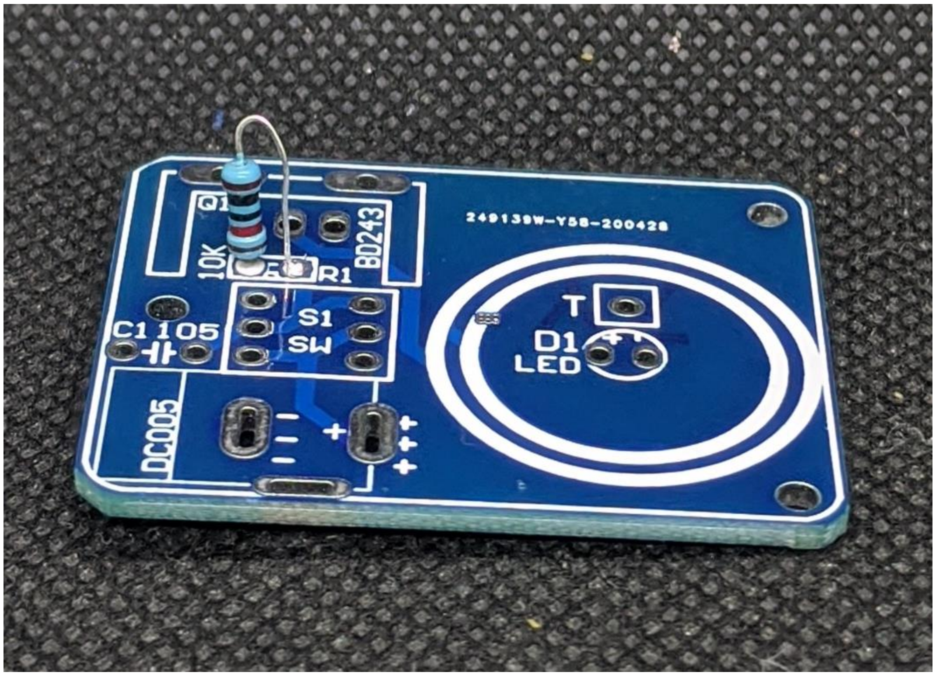
Build Steps:

(Keep in mind due to the nature of this kit, the directions provided are personal preference and do not need to be followed in this specific order).

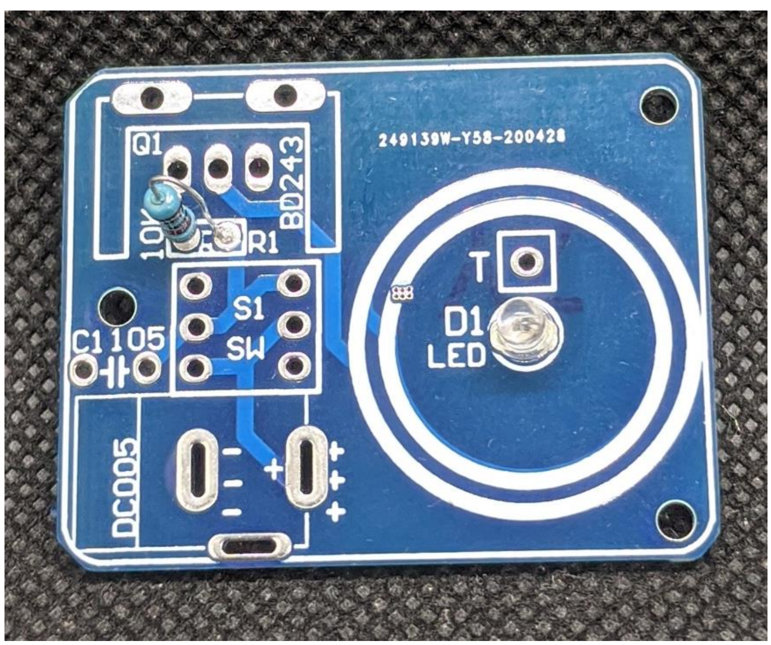
1. Lay out all the components on a flat surface and make sure everything is included.



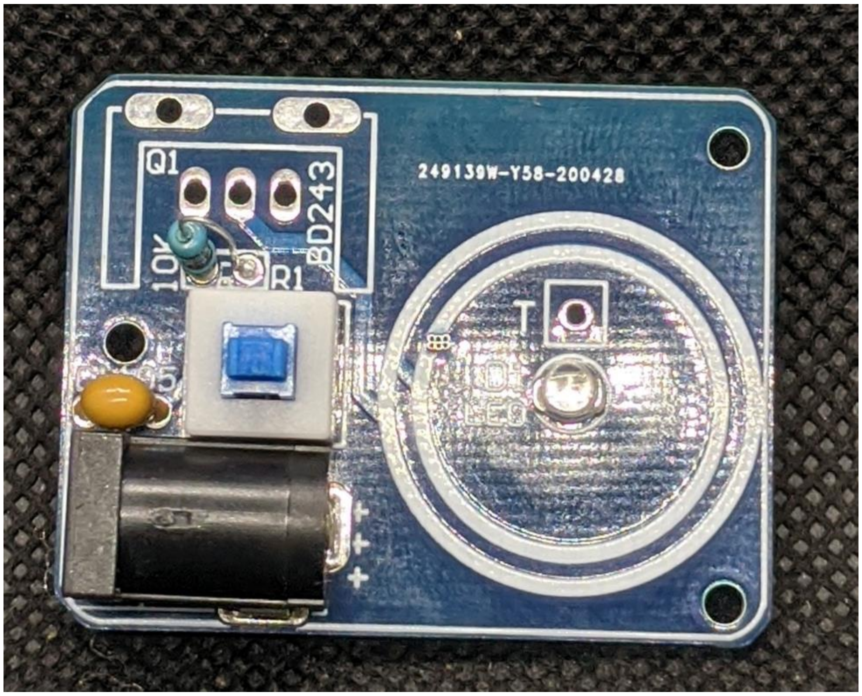
2. Start by soldering the 10K resistor as shown. Inserting this way allows the resistor to fit onto the PCB



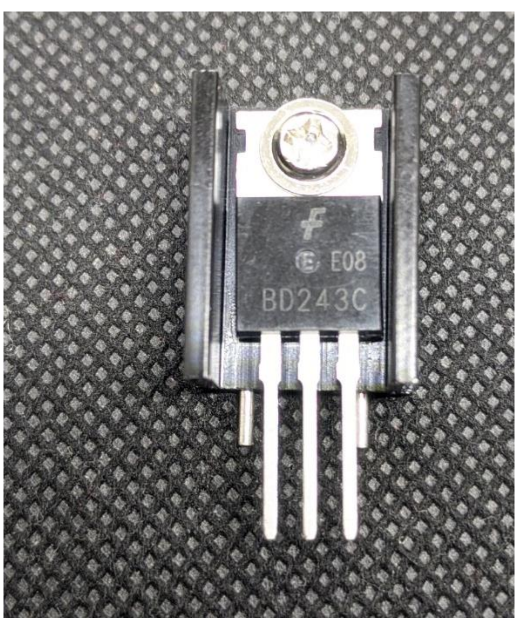
3. Solder the Blue LED in the middle of the white primary coil ring



4. Solder the 1uF Capacitor, switch, and DC power jack as shown.

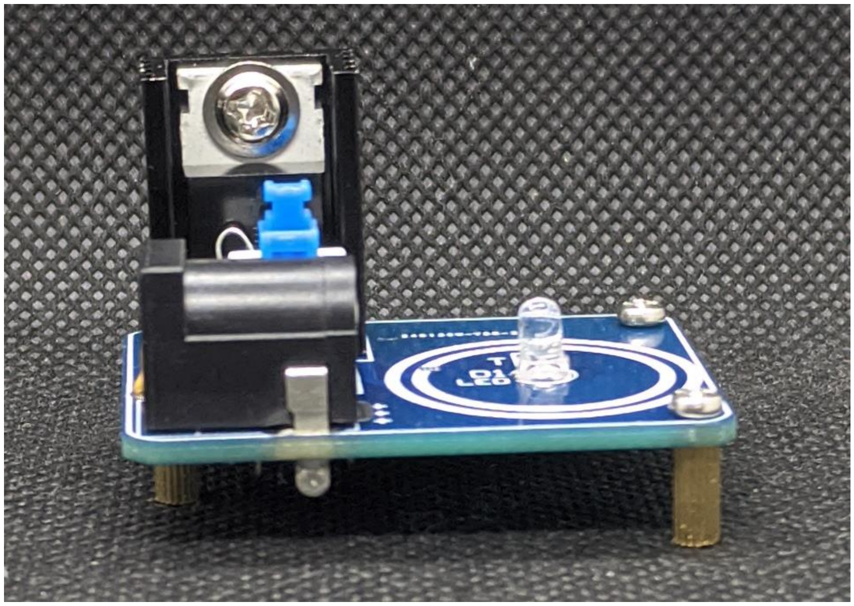


5. Screw the transistor to the heatsink using the included heatsink screw and solder it with the transistor facing the resistor.

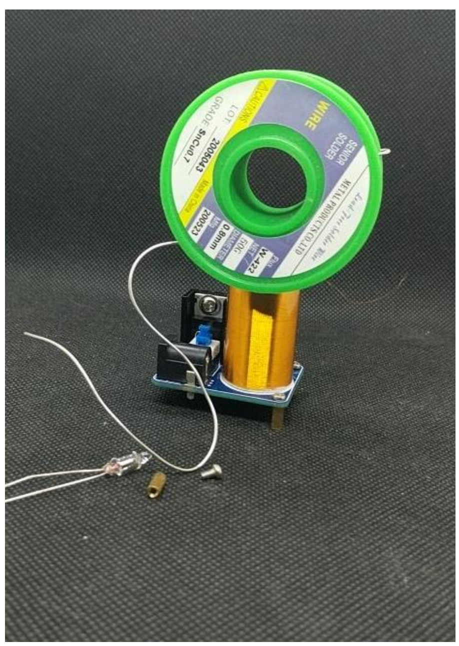




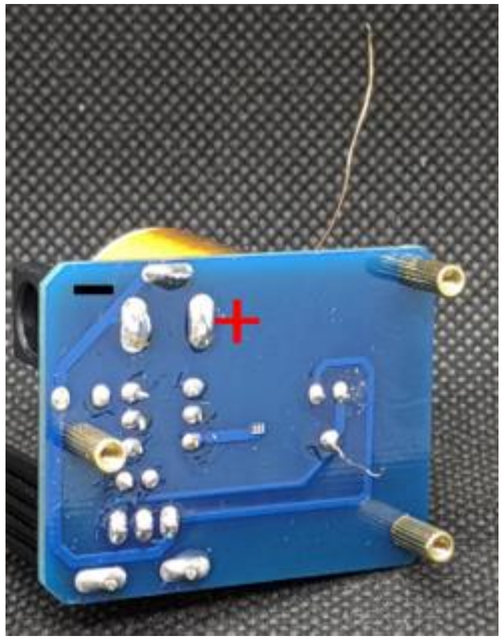
6. Screw the Standoffs to the PCB as shown. 3 Standoff screws and 3 spacers will be used.



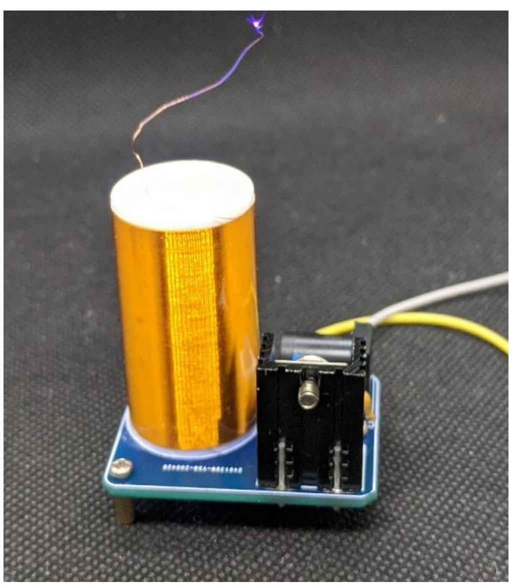
7. INSERT one end of the secondary coil wire to the hole T1 on the PCB. Do NOT solder yet. Using some Super Glue (not included). Glue the bottom of the coil to the PCB and use a weight to hold it in place. Wait 10-15 minutes to let the glue harden.

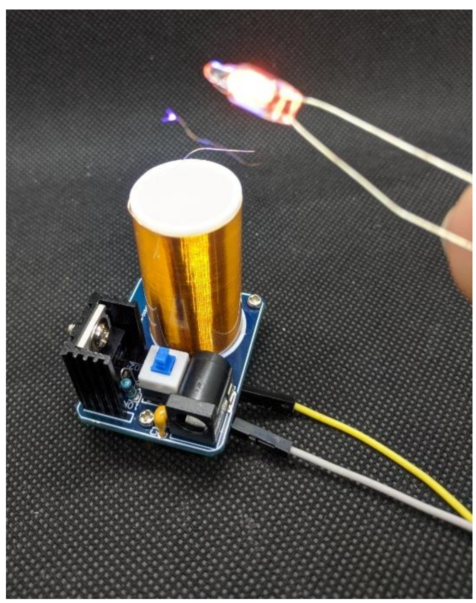


8. Now solder the inserted wire to the PCB. You can remove the enamel from the wire by setting the soldering iron to 400 F and with a clean tip running it across the wire. This will burn off the enamel and expose the wire to be soldered.



9. At this point the Kit is completed! Attach a DC power source between 9-12V to DC jack or to the Positive and negative rail of the board. This has been labeled in the photo above. The tesla coil can be tested using the included tester LED. When the power button is pushed, the blue led will illuminate the center of the coil and when the tester LED is brought near, the tester LED will turn on.





For any questions regarding this kit or others, feel free to contact us at support@circuitpop.com!